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January 5, 1940.

S
CONTROL
Insect

D
COOPERATION
J.C.C.

MEMORANDUM FOR C. J. OLSEN

Reference is made to your memorandum of December 19.

Attached hereto is a tabulation showing the insect control work which has been done in Region 4 during the last ten years. This tabulation shows separately by forests and by species the number of trees treated, the number of acres treated, and the total cost by years. There is also a total by forests for the ten-year period with the average cost per tree for the period indicated. There is also a summary for the entire Region. I hope that this tabulation is in usable form.

Also enclosed is a very brief write-up indicating the success which we have had in treatment, the treating methods which have been used and the latest effective methods recommended for use in projects of this nature.

(Attachment)

A. R. F.

INSECT CONTROL WORK IN REGION IV
(To accompany memorandum of
January 3, 1940)

In connection with the insect control work which has been done in the Intermountain Region during the past ten years, there follows a brief discussion covering such items as the method of treatment, the number of trees treated, the acreage covered, the average cost per tree, the total cost of project and the results which have been obtained by such treatment.

Methods:

In Region 4 insect control work has been done in two principal timber types. These are (a) the lodgepole pine type in which the principal species treated was lodgepole pine, with small numbers of associated species such as white bark and limber pine also being taken care of in the control operations. (b) Ponderosa pine type which was also the principal species treated.

Since lodgepole pine and limber pine are thin barked species, the treating method used universally was to spray the infested trees with oil and burn them standing. This method proved quite effective in destroying the adult beetles and larvae which are found between the bark and the wood. Occasionally very large trees were found which were infested to such a height that the oil spray could not be made to reach all of the infested portions. In such instances the trees were felled, piled into small decks and burned. Occasionally when the fire hazard was extremely high trees were felled and the bark peeled. The peeling of the bark exposed the larvae and young beetles to the direct rays of the sun and to the ravages of such insects as ants and proved effective though generally more expensive than the standing-burning method.

The standing-burning method could not be used in treating ponderosa pine, however, on account of the thickness of the bark of this species which prevented the penetration of heat in sufficient intensity to destroy the beetles and larvae between the bark and the wood. In the case of ponderosa pine the most practicable method was to fell the infested trees and either burn them individually or in decks. Where scattered trees were found the burning of individual trees was most practicable. Where trees occurred in groups decking before burning proved most economical and successful. As in the case of lodgepole pine, when the fire hazard was great it was necessary to peel the bark from infested

trees of this species and either burn the bark thus peeled or effect the destruction of the young beetles and larvae through exposure to the sun's rays, and the depredations of insects.

The standing-burning method, the felling-burning method and the felling-peeling method above described have been used during the last ten years and are still the most practicable and efficient methods of doing control work. The Bureau of Entomology and Plant Quarantine has done considerable experimental work in treating trees by use of penetrating oils and by the injection of various chemical solutions. They have not yet recommended to us, however, the use of any other method for large scale operations than the three mentioned above.

Accomplishment:

During the last ten years a total of 368,026 trees of all species have been treated. These trees were found on an area of 1,181,689 acres. The average cost per tree treated was $1.62 and the total cost of the treating operation was $594,473. In accomplishing this work regular insect control funds allotted to the Forest Service for this purpose were used. In addition, full advantage of emergency personnel and funds such as ERA, WPA, and CCC was taken where it was practicable to accomplish this type of work with the class of labor involved. The above total cost includes ERA, WPA, and CCC expenditures as well as regular funds. The attached tabulation shows a more complete breakdown of numbers treated and costs by forests and species.

Results:

On the Ashley Forest in Utah indications are that as a result of control measures in the past an epidemic which could easily have assumed serious proportions has been successfully combatted and only the natural endemic condition which exists in all virgin timber stands is now found on that forest.

On the Cache Forest as a result of vigorous control measures taken during 1929 to 1932, inclusive, a serious infestation has been brought under control and now needs only some light annual maintenance work to keep the situation in an endemic condition.

The situation on the Caribou, Targhee, and Teton and on a part of the Wyoming Forest, however, is entirely different. The infestation on these forests was so widespread and so virulent that attempted control of the mountain pine beetle in lodgepole pine and associated species on these forests and on adjacent forests in Region 1 was abandoned about 1932. Since that time no attempt to control the mountain pine beetle on these forests has been made except on the Green River drainage on the Wyoming National Forest where control measures since 1933 have proven quite effective in preventing the spread of the infestation into

this drainage. On some of the forests, notably the Caribou and parts of the Targhee, the infestation has died down to a more or less endemic condition due primarily to the lack of host material. This does not mean that the lodgepole stands on these forests have been entirely destroyed. In stands where the infestation was the heaviest excellent stands of young timber in the form of poles and small thrifty sawlog trees which are resistent to insect attack yet remain. The weakened mature and overmature trees, however, have practically all been killed.

On the Dixie National Forest the insect situation has been kept in control by an annual maintenance program which involves comparatively few trees. This work is taken care of largely by use of ERA or CCC labor and funds.

On the Minidoka Forest a very serious infestation was brought under control in 1936 and the work done has apparently been so successful that the only measures now necessary to keep the infestation in an endemic condition is the cutting of comparatively few trees annually in connection with timber sales and other forms of timber use at no direct cost to the Forest Service.

On the Nevada National Forest it is hoped that the treating of approximately 750 trees during the present winter and this coming spring will practically eliminate insect activities on this forest.

On the Powell National Forest previous treating operations have been successful on certain areas; on others due to lack of funds sufficient to effectuate a complete clean-up, additional work during the last year or two has been required. It is hoped that with funds available during the present fiscal year this situation can be completely brought under control by July 1, 1940 and will require only a small job of maintenance annually thereafter.

The infestation on the Uinta has been brought under control.

On the Wasatch National Forest vigorous control measures carried on from 1932 to 1935, inclusive, resulted in the apparent control of the infestation. During the fall of 1939, however, several outbreaks in scattered localities were found. Plans are being made to treat these areas before flight takes place this coming season, after which it is believed the situation will be well under control except for a comparatively small job of maintenance for the next few years.

In all of our work in insect control we have worked closely with and enjoyed the advice, cooperation and technical assistance of the Bureau of Entomology and Plant Quarantine, Division of Forest Insects.

January 3, 1940. A. R. F.

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INSECT CONTROL STATISTICS - R-4

1929 to 1939

Year	Species	No. of Trees Treated	No. of Acres Treated	Cost per Tree	TOTAL COST
		ASHLEY NATIONAL FOREST			
1931	L. P.	775	14,180		$ 1,337
1932	"	728	7,400		1,703
1933	"	907	5,800		2,733
1934	"	2,951	15,063		7,544
1935	"	896	6,840		2,277
1936	"	1,904	7,360		5,026
1937-38	"	-	-		-
TOTAL		8,161	58,643	$2.51	$ 20,620
1931	P. P.	-	-		-
1932	"	38	34,860		108
1933	"	48	8,860		118
1934	"	49	28,000		215
1935	"	160	16,800		1,674
1936	"	119	8,520		882
1937	"	-	-		-
1938	"	110	50		126
TOTAL		524	99,090	$5.96	3,121
1931-34	Limber Pine	-	-		-
1935	" "	660	396		1,020
1936-38	" "	-	-		-
TOTAL		660	396	$1.55	1,020
TOTAL FOR ASHLEY		9,345	158,128	$2.65	$ 24,761

Year	Species	No. of Trees Treated	No. of Acres Treated	Cost per Tree	TOTAL COST
		CACHE NATIONAL FOREST			
1929	L. P.	15,223	-		$ 4,206
1930	"	14,553	23,250		7,120
1931	"	9,150	34,000		9,497
1932	"	5,968	41,083		12,856
1933	"	-	-		-
1934	"	2,091	23,649		8,507
1935	"	47	4,016		419
1936	"	40	440		199
1937	"	172	1,207		342
1938	"	-	-		-
TOTAL		46,244	127,645	$0.95	$ 43,175
1930-34	Limber Pine	-	-		-
1935	"	180	320		463
1936	"	-	-		-
1937	"	632	2,440		2,144
1938	Lbr.pine & L.P.	139	5,600		760
1939	" " "	85	7,500		335
TOTAL		1,036	15,860	$3.67	$ 3,702
TOTAL FOR CACHE		46,280	143,505	$1.01	$ 46,877 *
		CARIBOU NATIONAL FOREST			
1929	L. P.	366	-		$ 362
1930	"	3,060	3,240		2,961
1931	"	12,868	15,920		17,389
1932	"	-	-		-
1933	"	6,060	16,150		14,283
1934-38	"	-	-		-
TOTAL FOR CARIBOU		22,394	35,310	$1.56	$ 35,015

* Cache - Includes ERA expenditures

Year	Species	No. of Trees Treated	No. of Acres Treated	Cost per Tree	TOTAL COST
		DIXIE NATIONAL FOREST			
1935	P. P.	66	5,620		$ 597
1936	"	1,388	19,236		14,576
1937	"	1,834	36,720		13,383
1938	"	1,793	20,000		8,949
TOTAL FOR DIXIE		5,033	81,576	$7.38	$ 37,505 *
		MINIDOKA NATIONAL FOREST			
1931	L. P.	1,220	-		$ 695
1932-34	"	-	-		-
1935	"	2,018	1,404		3,394
1936	"	18,043	15,541		55,128
1937	"	784	9,556		9,777
1938	"	-	-		-
TOTAL FOR MINIDOKA		22,065	26,501	$2.22	$ 48,994
		NEVADA NATIONAL FOREST			
1935-36	P. P.	171	4,600		$ 3,553
1937	"	65	1,100		945
1938	P.P. & flexilis	826	14,400		5,635
TOTAL FOR NEVADA		1,062	20,100	$7.73	$ 8,133 *
		POWELL NATIONAL FOREST			
1936(a)	P.P., D.F., & limber pine	2,180	16,720		$ 10,046
1937 "	P.P. & D.F.	3,308	28,280		15,252
1938	P.P.	4,664	50,228		16,780
TOTAL FOR POWELL		10,147	95,228	$4.20	$ 42,678 (b)

* Dixie - Includes ERA and CCC expenditures
* Nevada - " WPA and CCC "
(a) Powell - Includes some D.F. that could not be segregated
(b) " - " ERA, CCC and Farm Security Adm. expenditures

Year	Species	No. of Trees Treated	No. of Acres Treated	Cost per Tree	TOTAL COST
		TARGHEE NATIONAL FOREST			
1928	L. P.	3,079	1,660		$ 1,861
1929	"	31,204	22,600		16,469
1930	L.P. & Lbr.P.	30,065	67,948		28,449
1931	" "	35,987	111,510		46,054
1932	L. P.	669	6,900		1,424
1933-38	"	-	-		-
TOTAL FOR TARGHEE		100,904	210,418	$0.93	$ 94,257
		TETON NATIONAL FOREST			
1929	L. P.	651	672		$ 722
1930	"	4,515	4,000		3,062
1931	"	4,762	4,800		6,716
1932	"	1,461	4,800		1,960
1933-38	"	-	-		-
TOTAL FOR TETON		11,389	13,672	$1.09	$ 12,492
		UINTA NATIONAL FOREST			
1929-32	L. P.	-	-		-
1933-34	L.P.& Lbr.P.	4,272	7,824		$ 8,725
1935	L. P.	750	2,431		2,006
1936	L.P.& Lbr.P.	1,582	6,130		4,715
1937-38	L.P.	-	-		-
TOTAL FOR UINTA		6,604	16,435	$2.34	$ 15,446

Year	Species	No. of Trees Treated	No. of Acres Treated	Cost per Tree	TOTAL COST
		WASATCH NATIONAL FOREST			
1929-30	L. P.	-	-		-
1931	"	2,785	3,800		$ 4,519
1932	"	36,896	45,936		31,094
1933	"	4,772	11,888		8,902
1934	"	13,778	15,000		22,360
1935	"	11,041	19,881		17,648
1936	"	414	1,000		633
1937-38	"	-	-		-
TOTAL FOR WASATCH		69,686	97,505	$1.22	$ 85,155 *
		WYOMING NATIONAL FOREST			
1929	L. P.	6,943	4,480		$ 6,598
1930	"	19,337	61,822		26,586
1931	"	18,647	129,680		64,591
1932	"	1,079	600		558
1933	"	8,381	19,004		16,809
1934	"	-	-		-
1935	"	4,264	10,065		7,515
1936	L.P.& Lbr.P.	3,696	27,944		10,405
1937	L. P.	88	780		180
1938	"	3,742	28,116		9,920
TOTAL FOR WYOMING		65,077	283,311	$2.27	$143,162
GRAND TOTAL FOR "SUC" FORESTS		368,026	1,181,689	$1.62	$594,473 *

* Wasatch and Wyoming - Includes CCC expenditures

(Compiled 12/28/39)

D
COOPERATION
J.C.C.

Ogden, Utah
December 19, 1939

MEMORANDUM FOR MR. ROBB

The Joint Congressional Committee on Forestry desire a progress report of our activities in connection with the control of the pine beetle in (1) lodgepole types within the region, and (2) ponderosa types within the region. They want to know what success we have had in the treating of these two timber stands, how much has been treated, the cost for treatment, and the latest effective systems for controlling the pine beetle in these two timber stands.

If you will prepare these write-ups and deliver them to me, I will see that they get in the proper place.

A.R.F.

Ashley – SB. — success.
Cache – SB – success
Carbon – SB – Abandoned in R-4 & R-1 in advice of Bureau
Dixie – SB – success Ponderosa only
Humboldt – SB – success
Nevada – SB – success
Powell – SB – success
Sanpete – abandon
Sevier – abandon
Uinta – SB – success
Wasatch –
Wayne –